



# Hong Kong

## Solid Waste Management Technology

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Date: 06/2006  
ID: 136304

### Summary

Hong Kong's three strategic landfills will be full in the next five to ten years. The Hong Kong Government (HKG) recently announced a policy framework for municipal solid waste management, which opens a huge waste reduction, recycling and treatment technology market. Among the HKG's waste management initiatives is the establishment of EcoPark, a facility dedicated to value-added waste recycling. This facility will come on line by the end of 2006 and will create a demand for high-end recycling processes and technologies for handling batteries, tires, electronic goods, plastics and wood. The HKG is considering establishing an Integrated Solid Waste Management Facility, which will likely encompass these elements – mechanical waste separation, biological treatment and incineration. The HKG has also undertaken feasibility studies on three landfill extension projects. US waste management technology suppliers can consider forming partnerships and consortia with established waste management facilities operators in Hong Kong to explore the local market.

### Market Demand

Due to the fact that Hong Kong's three strategic landfills will be full in the next five to ten years, the Hong Kong Government (HKG) announced a policy framework for municipal solid waste management in December 2005. The framework encourages waste separation & recycling, and incinerating or sending the remaining waste to the landfill. This policy framework opens a huge waste reduction, recycling and treatment technologies market and offers outstanding business opportunities for US companies.

The HKG's initiatives to encourage waste separation and recycling include:

- ❑ Implement waste disposal charges  
Prior to 2006, there was no landfill charge. From January 2006, however, construction waste producers pay US\$16 per ton for waste disposal at landfills. The HKG plans to introduce further municipal solid waste disposal charges in 2007.
- ❑ Possible financial incentives to support the local recycling industry
- ❑ Introduction of the "Producer Responsibility Scheme" – manufacturers, distributors, and sellers all bearing the responsibility of waste minimization  
The HKG plans to regulate waste tires, plastic shopping bags and electrical and electronic equipment in 2007; packaging materials and beverage containers in 2008, and rechargeable batteries in 2009.
- ❑ Introduction of the "Polluter-pays Principle"  
An example is the introduction of landfill charges.
- ❑ Establishment of an EcoPark to provide long-term land and governmental support for local recyclers
- ❑ Encouraging the "green (products made with recycled materials) procurement policy"

There will be a rise in waste reduction, treatment and management technology demand in anticipation of the implementation of the above initiatives and the EcoPark gradually coming online in phases starting in late 2006.

### EcoPark

EcoPark is a facility developed solely for use by the environmental and recycling industries. The construction cost for this 20 hectares-EcoPark is approximately US\$40 million. Upon completion, it will be equipped with an internal access road network, utilities, marine loading & unloading facilities and an administration building for research and

training purposes. Phase I of EcoPark will come on line in the end of 2006. Phase II is scheduled for completion by 2009. The Legislative Council approved the funding of this project in March 2006. A month later, the HKG sought expressions of interest from potential recyclers to get a comprehensive understanding on:

- ❑ Recyclers' preferences on recyclable materials to be processed and recycling processes to be adopted;
- ❑ Recyclers' needs including tenancy arrangements, utilities requirements, superstructure requirements, etc.
- ❑ Recyclers' expectations of the EcoPark

The HKG has received more than 50 expressions of interest from local and overseas companies. The information gathered will shape the operation and detailed planning of EcoPark. In general, the HKG prefers and encourages value-added and high-end recycling processes and disapproves of the simple recovery of recyclable materials for export.

The HKG conducted an Environmental Impact Assessment (EIA) on EcoPark, and based on the findings, would allow the following materials and recycling processes at the EcoPark:

- ❑ Batteries (mechanical/physical separation, shredding, neutralization (electrolyte))
- ❑ Electronics (separation and testing, shredding, electromagnetic and electrostatic sorting, manual dismantling)
- ❑ Glass (Manual or automated sorting, crushing, melting, molding, forming and finishing)
- ❑ Organic Food Waste (composting)
- ❑ Ferrous Metals (Sorting and baling, shearing and shredding)
- ❑ Non-ferrous Metals (Sorting and baling, shearing and shredding, melting, refining and alloying)
- ❑ Paper (Sorting and baling, pulping, cleaning, de-inking, non-chlorine bleaching, pressing and drying)
- ❑ Plastics (Sorting, crushing and baling, flaking, shredding and cutting, blending, molding and extrusion, Plastic Wood Composite (PWC) manufacturing)
- ❑ Textiles (Sorting and baling)
- ❑ Rubber Tires (De-beading, shredding, crumbing, processing, re-treading)
- ❑ Wood (Dismantling and sorting, compaction, shearing, pallet refurbishment, chipping, non-chlorine bleaching, PWC manufacturing)

#### Integrated Solid Waste Management Facility (ISWMF)

Looking further ahead, the HKG will build a new Integrated Solid Waste Management Facility (ISWMF) within the next decade. The ISWMF will likely be a multi-technology approach. Biodegradable waste separated at the source from commercial and industrial establishments will be given biological treatment (composting). Mixed municipal solid waste will be treated first by a mechanical-biological treatment (waste separation and composting) and the remaining by a thermal treatment (incineration). An incinerator with the capacity of handling more than 5,000 tons of solid waste per day will make up the core component of the ISWMF. HKG officials have made visits to many overseas countries (including Europe and North America) to look at different treatment technologies.

#### Landfill Extension Projects

The HKG started commissioning studies on its landfill extension projects (i.e., new landfill space development next to existing ones) in 2005. A U.K. engineering consulting firm's (Ove Arup) branch in Hong Kong started the feasibility study on the Northeast New Territories (NENT) landfill in early 2005. ERM-Hong Kong is undertaking the South East New Territories (SENT) Landfill Extension Feasibility Study, which will be completed by February 2007. The HKG is currently inviting bids from consulting firms to take up the West New Territories Landfill (WENT) Extensions Feasibility Study, and will award the consulting contract in the latter half of 2006. The purpose of the feasibility studies is to evaluate the feasibility, constraints, requirements and mitigation measures for the landfill extensions, and to prepare tender and contract documents. The landfill extension projects will have a total capital cost of US\$1 billion, and probably incorporate the design, build and operate elements. Commissioning of these extension projects will begin in the early 2010's and will take approximately five years to complete.

## Best Prospects

- ☐ Incineration
- ☐ Mechanical-biological treatment (waste sorting & separation)
- ☐ Biological treatment (composting)
- ☐ Waste-to-energy technologies
- ☐ Recycling technologies for handling different materials at EcoPark (see section on EcoPark above)

## Key Suppliers

There exists little or no environmental equipment manufacturing in Hong Kong. The city depends heavily on imported technology and equipment.

The key competitors for future Hong Kong projects are SITA (France) and Onyx (France), which both have significant and long term waste management operations and related activities in Hong Kong. SITA, a global leader in waste management has a joint venture with the Swire Group, one of Hong Kong's largest conglomerates. Swire-SITA operates the NENT and WENT landfills in Hong Kong. Onyx, also a global leader in waste management, has a joint venture with CITIC Pacific, a leading infrastructure focused conglomerate with ownership based in Beijing, China. Onyx is currently operating the SENT landfill and the Chemical Waste Treatment Plant in Hong Kong. Both companies have extensive experience dealing with the HKG Environmental Protection Department (EPD) and other government departments.

Japanese companies including Mitsubishi, Ebara and Nippon Steel have shown keen interest in providing incinerator and related thermal treatment technologies. Mitsubishi offers incineration technologies and is looking into forming a consortium to bid on the ISWMF project. Ebara offers a wide range of thermal technologies including: stoker-type incinerators for Municipal Waste, Stoker-type incinerator facilities equipped with plasma ash melting systems, refuse-derived fuel production facilities, fluidized bed gasification and ash melting, gasification of waste plastics, fluidized bed boiler for energy recovery from high calorific value wastes etc. Other companies from Australia, Canada, USA and European have also engaged the HKG. Canada and the USA have also introduced a number of biological technologies for composting.

Traditionally, most of the companies competing for waste management projects are quite large. Smaller technology suppliers usually lack sufficient finances and a wide range of technical expertise. They normally form partnerships or a consortium with waste management facilities operators to submit full proposals to the EPD. These companies have influenced the HKG's thinking on possible approaches to addressing appropriate and feasible technologies for Hong Kong. US waste management technology suppliers should consider using this tactic to expand into Hong Kong.

## Prospective Buyers

### Environmental Protection Department (EPD)

The EPD is the government administrative body overseeing and managing the Hong Kong public sector waste management projects and is the key body for all future purchasing decisions. EPD's web site is:

[www.epd.gov.hk/epd](http://www.epd.gov.hk/epd)

## Market Entry

### Role of Consulting Companies

Equipment suppliers interested in this market normally maintain an excellent working relationship with engineering consulting firms that are active in Hong Kong's environmental projects to obtain up-to-date project information and equipment requirements. Normally, an environmental project involves a feasibility study, design, project management, construction, equipment installation, operation, and sometimes aftercare (such as landfill restoration). The HKG purchases equipment and services through a competitive bidding process. Normally, the engineering consulting company winning the detailed design contract will manage the whole project including

specifying equipment requirements. It is, therefore, desirable for a US newcomer to work with these engineering firms.

Several international engineering consulting firms are active in Hong Kong's environmental projects, including Environmental Resources Management (ERM), Camp, Dresser & McKee International (CDM), Maunsell, Ove Arup & Partners Hong Kong Limited, and Scott Wilson. Local companies, such as ATAL Engineering, have grown tremendously and are active in environmental projects in Hong Kong and China.

Hong Kong's solid waste management operators, such as Onyx and Swire, have invested heavily in the Chinese mainland and own or partially own a number of facilities there. This opens opportunities for U.S. companies to sell to multiple facilities via one waste management company operating in Hong Kong.

## **Market Issues & Obstacles**

### *No Import Tariff or Duties - Hong Kong*

Hong Kong is a duty free port. There are no import tariffs on solid waste management equipment. For more information, please visit the Hong Kong Customs & Excise Department's web site:  
[www.customs.gov.hk/eng](http://www.customs.gov.hk/eng)

### *Standards*

Few product safety standards are required for the domestic Hong Kong market. Currently, building materials and electrical/mechanical supplies have to meet British standards. However, Hong Kong is gradually recognizing other standards so U.S. companies seeking to export to Hong Kong should check with potential agents and customers to determine the exact standards required.

### *Labeling and Marking Requirements*

Non-tariff barriers such as labeling requirements and standards are minimal.

### *Selling to the Hong Kong Government*

The Government Logistics Department (GLD) is the central purchasing, storage and supply organization for the Government of the Hong Kong Special Administrative Region. GLD purchases are fully consistent with the provision in the World Trade Organization Agreement on Government Procurement (WTO GPA). US companies interested in selling their products to the Hong Kong Government should register with the GLD in writing or register online through the Electronic Tendering System. The contact point for GLD is:

Supplies Officer (Supplier Record)  
Government Logistics Department  
9/F, North Point Government Offices  
333 Java Road, North Point  
Hong Kong  
Phone: (852) 2231-5289  
Fax: (852) 2807-2764  
Email: [hktender@gld.gov.hk](mailto:hktender@gld.gov.hk)  
Website: [http://www.gld.gov.hk/eng/services\\_2.htm](http://www.gld.gov.hk/eng/services_2.htm)

The U.S. Commercial Service at the U.S. Consulate General in Hong Kong regularly reports on government tenders. These reports are available via the National Trade Data Bank. For information, call the U.S. Department of Commerce at 1-800 stat-usa.

## **Trade Events**

Eco Expo Asia - International Trade Fair on Environmental Protection

Date: Oct 27 – 30, 2006

Venue: Asia World Expo, Hong Kong

Website: [www.ecoexpoasia.com](http://www.ecoexpoasia.com)

This is a US Department of Commerce certified trade show. Please contact U.S. Commercial Service in Hong Kong (e-mail: [hong.kong.office.box@mail.doc.gov](mailto:hong.kong.office.box@mail.doc.gov)) for additional information on exhibiting or participating at this show.

### Resources & Key Contacts

Environmental Contractors Management Association  
[www.ecma.org.hk](http://www.ecma.org.hk)

Green Council  
[www.greencouncil.org](http://www.greencouncil.org)

Hong Kong Environmental Industry Association  
[www.hkenvia.org](http://www.hkenvia.org)

Hong Kong Green-Manufacturing Alliance  
[www.gmekh.net](http://www.gmekh.net)

Hong Kong Sustainable Communications Association  
[www.hksca.org](http://www.hksca.org)

Hong Kong Waste Management Association  
[www.hongkongwma.org.hk](http://www.hongkongwma.org.hk)

### For More Information

The U.S. Commercial Service in Hong Kong can be contacted via e-mail at: [hong.kong.office.box@mail.doc.gov](mailto:hong.kong.office.box@mail.doc.gov); Phone: (852) 2521-1467; Fax: (852) 2845-9800 or visit our website: [www.buyusa.gov/hongkong/en](http://www.buyusa.gov/hongkong/en).

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